SYCARD TECHNOLOGY

CF extend 160A & CF extend 160B

CompactFlash™ Extender Cards User's Manual

Preliminary

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1.0 Introduction

Sycard Technology's CF extend 160, CF extend 160A and CF extend 160B CompactFlash extender cards are debug tool for CompactFlash development and test. CF extend 160/160A/160B offers the following features:

- Push button switches simulates card removal/insertion cycle
- Low profile enclosure compatible with all CompactFlash hosts
- 4 layer construction to insure low noise environment
- All 50-pins available as test points
- Both I/O and memory mode signals clearly marked
- Vcc can be isolated through jumper blocks for current measurements
- Surface mount resistors can be added to any signal line
- Vcc LEDs indicate 3.3V or 5V operation
- Convenient grounding posts for scope probes or other test equipment
- Supports type I CompactFlash (3.3mm) cards - **CF extend 160**
- Supports type I and type II CompactFlash (3.3mm and 5.0mm) cards - **CF extend 160A/160B**

2.0 Using the CF extend 160/160A/160B

Using the CF extend 160/160A/160B is relatively straightforward. The extender card is inserted into the desired slot in the host system. Then the CompactFlash card under test is inserted into the card connector.

> ***Caution***: *Insertion and removal of the extender and CF card should be done with care. The CF Card's fragile connectors may be broken or bent if improper force is used. Both card and extender should be inserted straight without any lateral movement or force. Proper care and use of the extender card will insure years of trouble free operation.*

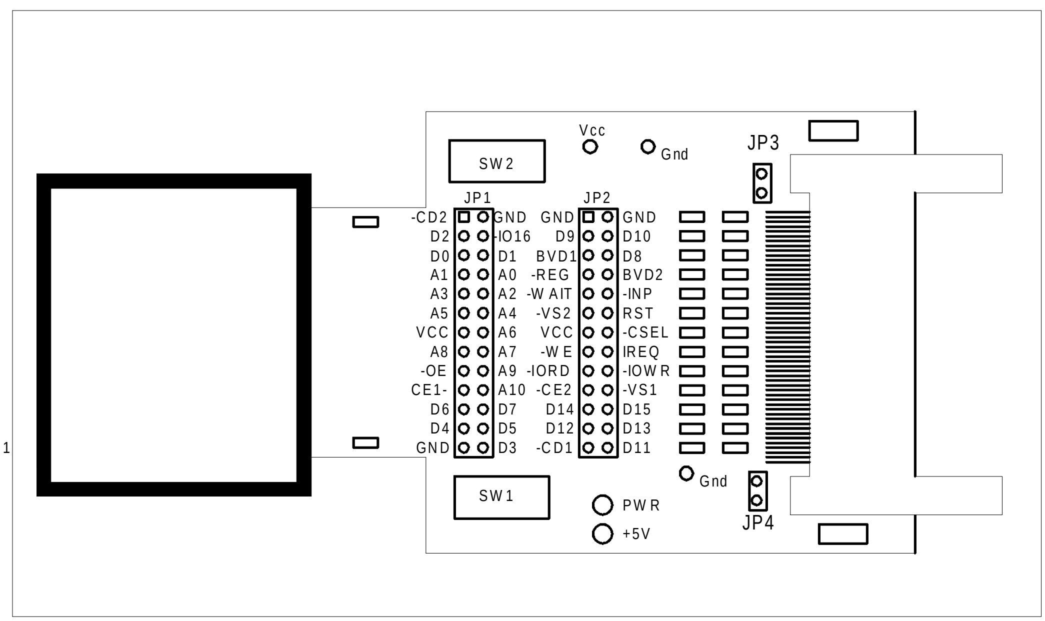


Figure 2.0-1 The CF extend 160, CF extend 160A and CF extend 160B

2.1 Test Points

All 68-pins of the interface are available to probe through clearly marked headers. The headers are standard 0.1" dual row headers with 0.025" posts designed to accept a wide variety of test probes and cable assemblies.

2.2 Power Indicators

Two LED power indicators display the status of the socket's Vcc. The PWR LED indicates that power is applied to the board. When both the PWR LED and the 5V LED are lit, a Vcc of greater than approximately 3.5V is present. When only the PWR LED is lit, the Vcc is at a level of less than 3.5V.

> ***Note****: The power LEDs are designed to indicate the presence of power on the Vcc supply pins. The LEDs do not provide an accurate measurement of Vcc. Use a voltmeter to determine the actual operating voltage.*

2.2 Current Measurements

The Vcc power bus may be isolated from the CF Card socket through two jumper blocks labeled JP3 and JP4. Both jumpers must be removed to isolate the power. A current meter can be inserted to measure card current consumption.

> ***Caution****: Care must be taken to insure that the current measuring device is inserted before turning on power to the host socket. Improper power sequencing may cause a damaging latchup condition.*

2.3 Using the Card Detect Switches

CF extend 160/160A160B includes two micro switches (SW1 and SW2) which can be used to momentarily interrupt the CD1- and CD2- signals. By interrupting the CD1- and CD2- signals, a card removal/insertion cycle can be simulated.

To test the operation of the Card Detect switches, be sure that your CF Card Software drivers are loaded. Momentarily press both of the Card Detect switches. Most software drivers will issue a removal beep followed by an insertion beep. The software may also remove power from the socket when the card is removed.

2.4 Termination Area

An area with SMT resistors is located between the test points and the card connector allows access to all CF Card signals. A series of surface mount pads allows the user to isolate a signal by cutting a trace. The user may also add series resistors to any signal.

When shipped from the factory, the resistor pads are shorted with PCB traces. In order to insert series resistor, these traces must be cut prior to soldering the resistor to the board. Figure 2.4-1 and 2.4-2 illustrate the termination areas located on both sides of the CF extend 160 board. Use this guide when making modifications to the board, since the silk-screen designations may be difficult to read.

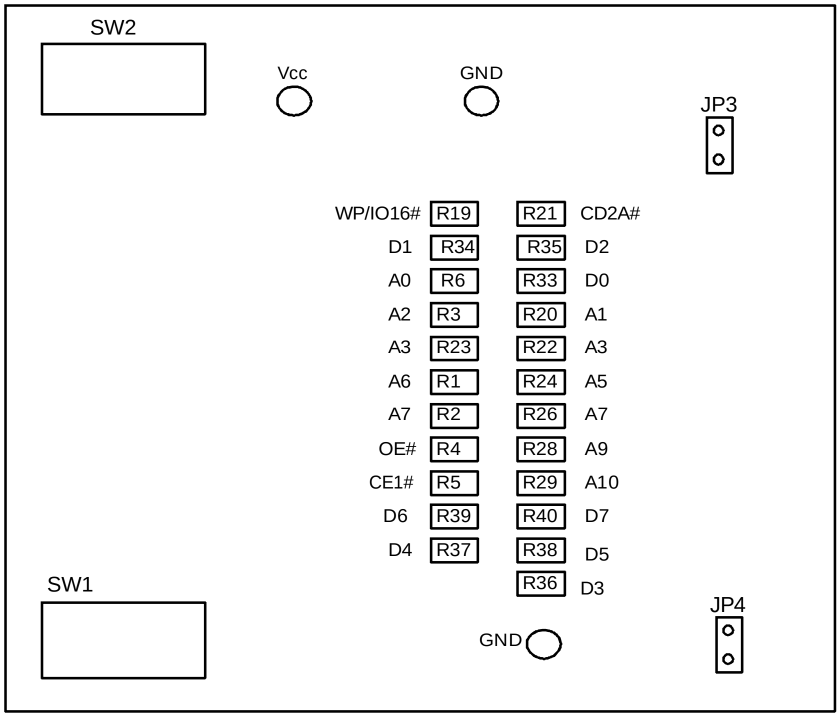


Figure 2.4-1 Termination Area - Component Side

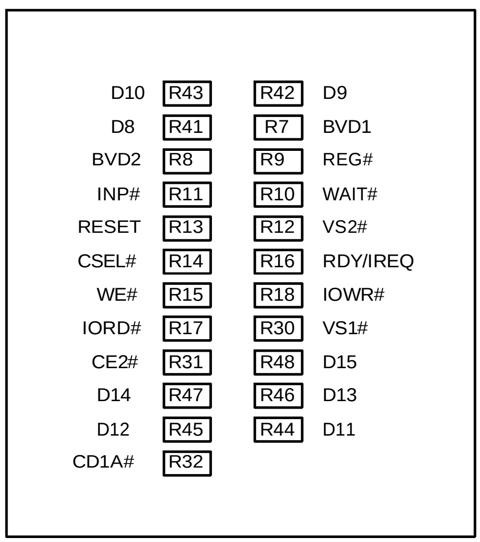


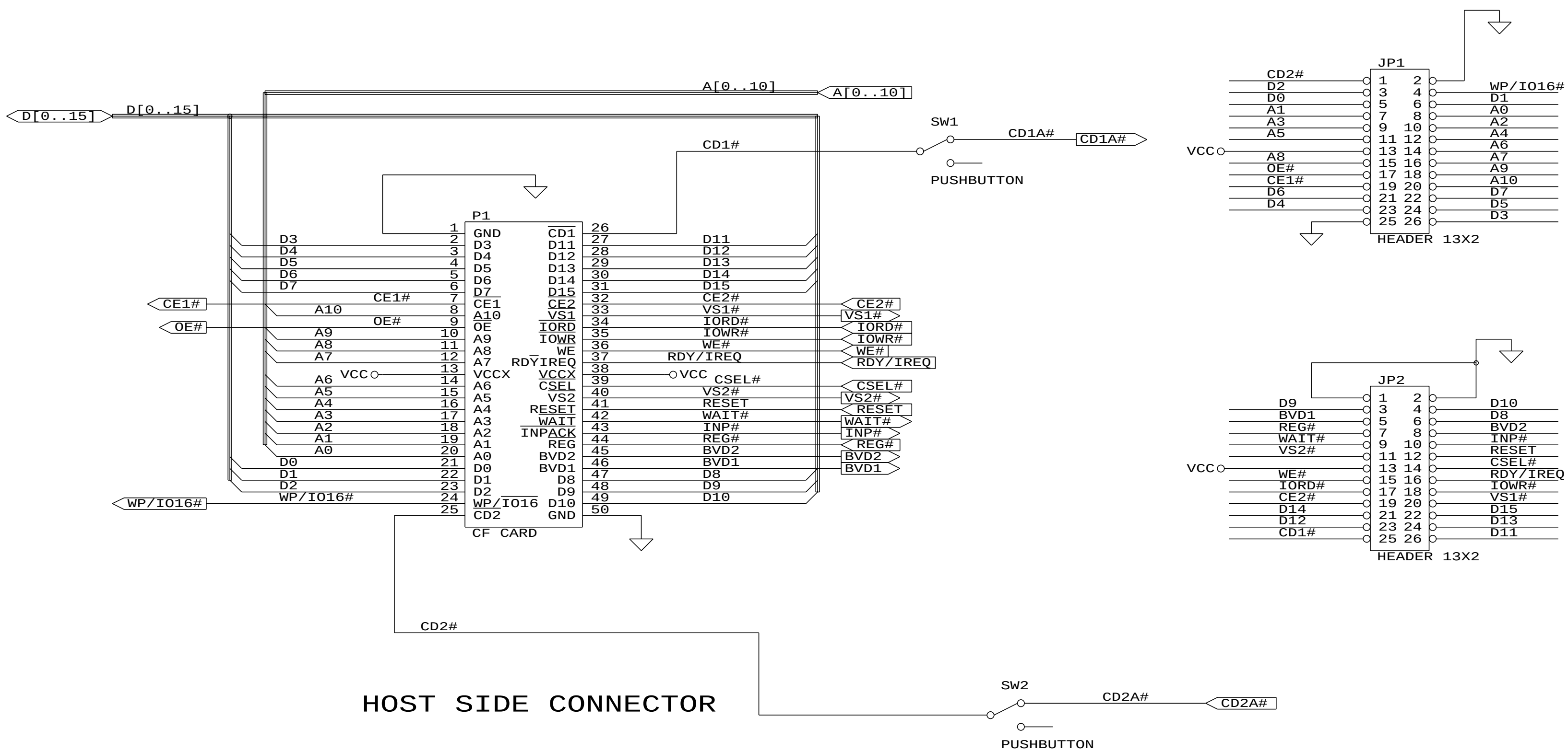
Figure 2.4-2 Termination Area - Solder Side

Appendix A

A. CompactFlash 50-Pin Interface

Pin	Name	Description	Pin	Name	Description
1	GND	Ground	26	CD1#	Card Detect 1
2	D03	Data Bit 3	27	D11	Data Bit 11
3	D04	Data Bit 4	28	D12	Data Bit 12
4	D05	Data Bit 5	29	D13	Data Bit 13
5	D06	Data Bit 6	30	D14	Data Bit 14
6	D07	Data Bit 7	31	D15	Data Bit 15
7	CE1#	Card Enable 1	32	CE2#	Card Enable 2
8	A10	Address Bit 10	33	VS1#	Voltage Sense 1
9	OE#	Output Enable	34	IORD#	I/O Read Strobe
10	A09	Address Bit 9	35	IOWR#	I/O Write Strobe
11	A08	Address Bit 8	36	WE#	Write Enable
12	A07	Address Bit 7	37	RDY/BSY/IREQ	Ready/Busy/Interrupt Request
13	VCC	Card Power	38	VCC	Card Power
14	A06	Address Bit 6	39	CSEL#	Master Slave Select
15	A05	Address Bit 5	40	VS2#	Voltage Sense 2
16	A04	Address Bit 4	41	RESET	Card Reset
17	A03	Address Bit 3	42	WAIT#	Extend Bus Cycle
18	A02	Address Bit 2	43	INPACK#	Input Port Acknowledge
19	A01	Address Bit 1	44	REG#	Register Select
20	A00	Address Bit 0	45	BVD2	Battery Voltage Detect 2
21	D00	Data Bit 0	46	BVD1	Battery Voltage Detect 1
22	D01	Data Bit 1	47	D08	Data Bit 8
23	D02	Data Bit 2	48	D09	Data Bit 9
24	WP/IOIS16	Write Protect I/O is 16 Bits	49	D10	Data Bit 10
25	CD2#	Card Detect 2	50	GND	Ground

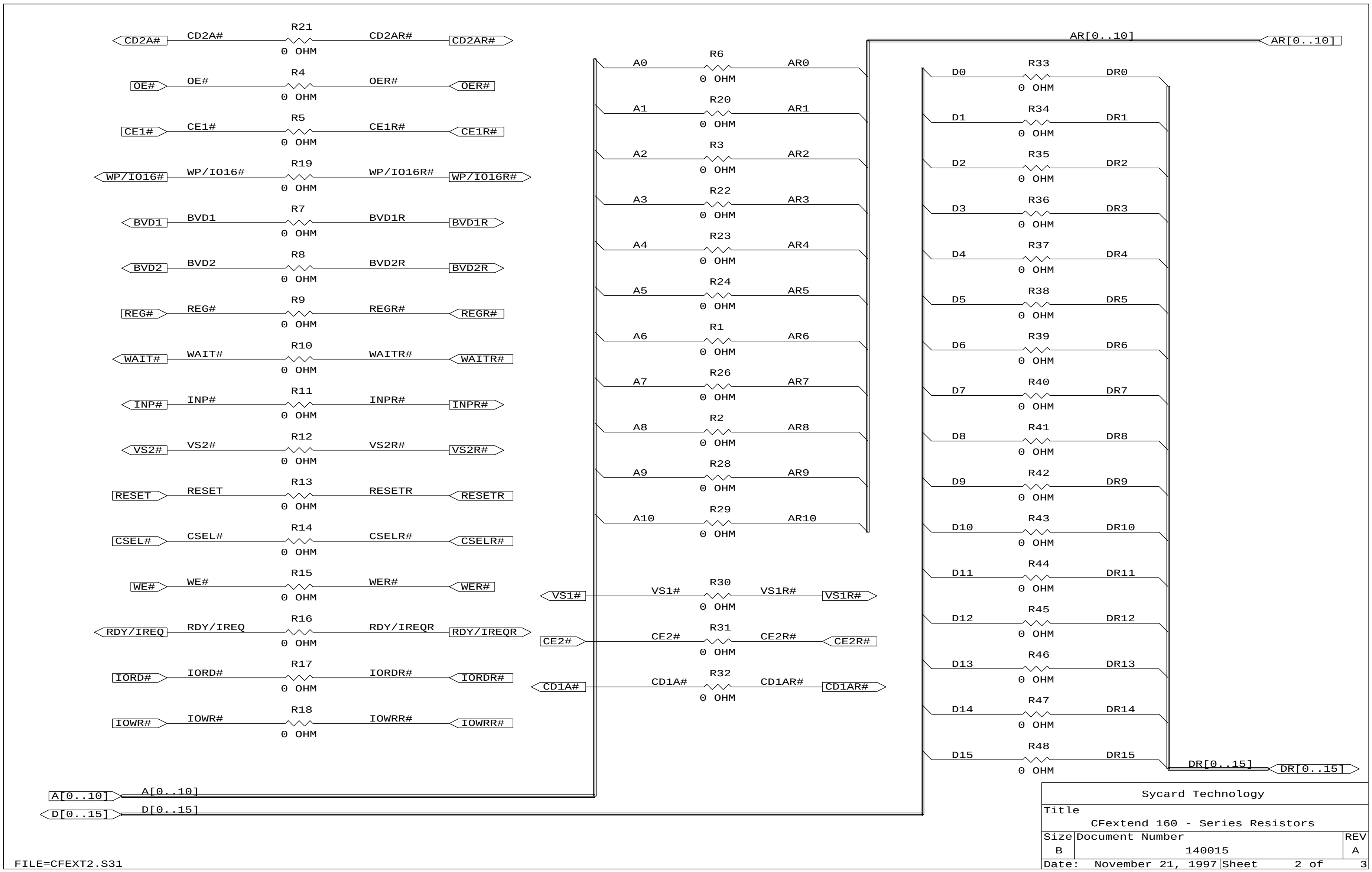
B. CF extend 160 Schematic

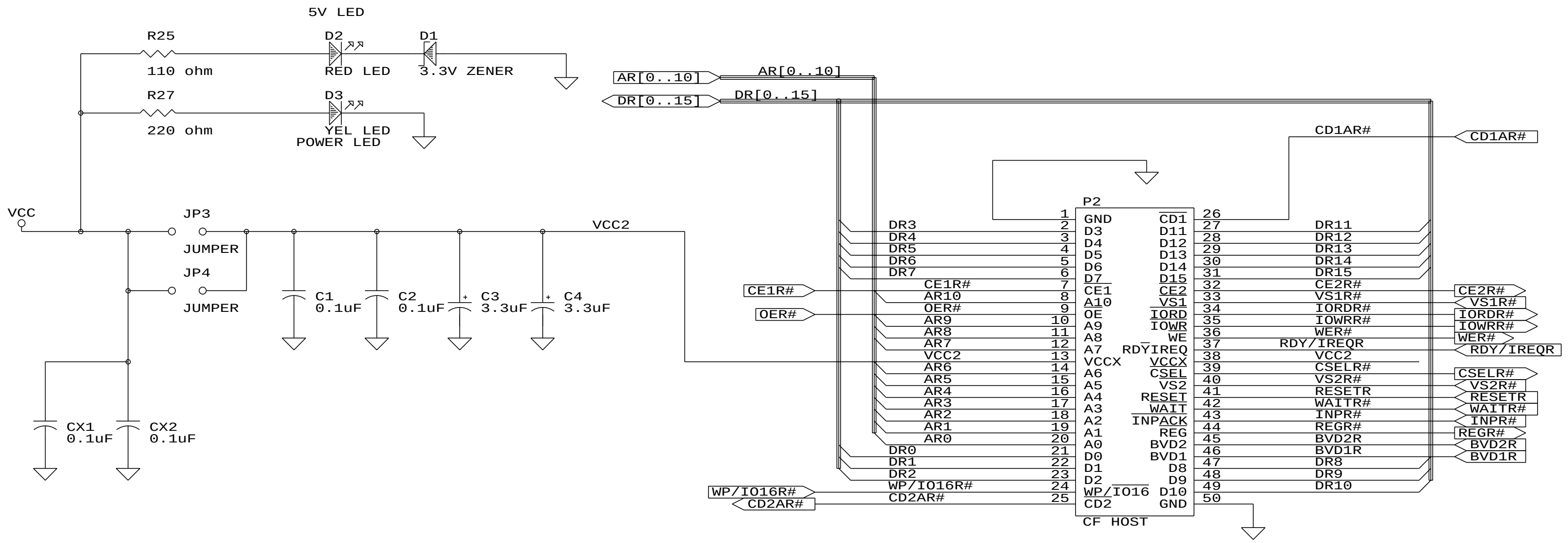


HOST SIDE CONNECTOR

FILE=CFEXT1.S31

Sycard Technology		
Title: CFextend 160 - Host Connector		
Size: B	Document Number: 140015	REV: A
Date: October 23, 1997	Sheet 1 of 3	


CD2A# — R21 0 OHM — CD2AR#
OE# — R4 0 OHM — OER#
CE1# — R5 0 OHM — CE1R#
WP/IO16# — R19 0 OHM — WP/IO16R#
BVD1 — R7 0 OHM — BVD1R
BVD2 — R8 0 OHM — BVD2R
REG# — R9 0 OHM — REGR#
WAIT# — R10 0 OHM — WAITR#
INP# — R11 0 OHM — INPR#
VS2# — R12 0 OHM — VS2R#
RESET — R13 0 OHM — RESETR
CSEL# — R14 0 OHM — CSELR#
WE# — R15 0 OHM — WER#
RDY/IREQ — R16 0 OHM — RDY/IREQR
IORD# — R17 0 OHM — IORDR#
IOWR# — R18 0 OHM — IOWRR#
A0 — R6 0 OHM — AR0
A1 — R20 0 OHM — AR1
A2 — R3 0 OHM — AR2
A3 — R22 0 OHM — AR3
A4 — R23 0 OHM — AR4
A5 — R24 0 OHM — AR5
A6 — R1 0 OHM — AR6
A7 — R26 0 OHM — AR7
A8 — R2 0 OHM — AR8
A9 — R28 0 OHM — AR9
A10 — R29 0 OHM — AR10
AR[0..10]
VS1# — R30 0 OHM — VS1R#
CE2# — R31 0 OHM — CE2R#
CD1A# — R32 0 OHM — CD1AR#
D0 — R33 0 OHM — DR0
D1 — R34 0 OHM — DR1
D2 — R35 0 OHM — DR2
D3 — R36 0 OHM — DR3
D4 — R37 0 OHM — DR4
D5 — R38 0 OHM — DR5
D6 — R39 0 OHM — DR6
D7 — R40 0 OHM — DR7
D8 — R41 0 OHM — DR8
D9 — R42 0 OHM — DR9
D10 — R43 0 OHM — DR10
D11 — R44 0 OHM — DR11
D12 — R45 0 OHM — DR12
D13 — R46 0 OHM — DR13
D14 — R47 0 OHM — DR14
D15 — R48 0 OHM — DR15
DR[0..15]
A[0..10]
D[0..15]
FILE=CFEXT2.S31
Sycard Technology
Title
CFextend 160 - Series Resistors
Size B
Document Number 140015
REV A
Date: November 21, 1997
Sheet 2 of 3



SOCKET SIDE CONNECTOR

FILE=CFEXT3.S31

Sycard Technology		
Title: CFextend 160 - Card Side		
Size: B	Document Number: 140015	REV: A
Date: November 21, 1997	Sheet 3 of 3	